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ABSTRACT

Factors affecting enrollment in agricultural education at the secondary level were determined in a two-part study. One part focused on factors influencing students' decisions to enroll in agricultural education; the other examined 64 recruitment and retention practices teachers use. Purposive sampling ensured geographic and demographic representation of model programs throughout Pennsylvania. Thirteen programs and 76 teachers participated in the study. Sociodemographic information, occupational and educational goals, and agricultural education perceptions were provided by 200 students participating in part one. In addition, 12 teachers and 20 counselors from 13 participating schools identified factors that affect students' enrollment decisions. Fifty teachers in part 2 identified recruitment and retention practices used and information regarding recruitment of minority students. Most enrollees were white males from rural areas who had less than a "B" (3.00) academic average. Regardless of enrollment status or grade level, similar factors were found to influence enrollment decisions. Three factors were most influential: whether agricultural education was beneficial to students' futures; whether students were influenced by their image of agricultural education, by peers, and adults; and the impact of school standards and requirements. (Eleven tables and 42 references are included.) (Author/NLA)

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FACTORS AFFECTING ENROLLMENT TRENDS IN
PENNSYLVANIA AGRICULTURAL EDUCATION PROGRAMS

A Thesis in

Agricultural Education

by

Saralyn S. Johnson

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Master of Science

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ABSTRACT

The purpose of this study was to identify factors which affect enrollment in agricultural education at the secondary level. The study was conducted in two parts. Part I of the study focused on factors that influenced students' decisions to enroll in agricultural education at the secondary level. Part II examined 64 recruitment and retention practices agricultural education teachers perceived to be effective and frequently used in their local programs.

Purposive sampling was used to insure geographic and demographic representation of "good" agricultural education programs throughout Pennsylvania. Thirteen agricultural education programs and 76 agricultural education teachers were identified by a panel of experts to participate in the study. Agricultural education teachers in each of the participating schools identified 15 students to participate.

Sociodemographic information, occupational and educational goals, and agricultural education perceptions were provided by 200 students participating in Part I. In addition, 12 agricultural education teachers and 20 guidance counselors from the 13 participating schools identified factors that they perceived as impacting students' decisions to enroll in agricultural education. Fifty teachers in Part II of the study identified successful recruitment and retention practices they frequently used to attract and retain students. Teachers also provided information regarding recruitment of minority students.

The majority of current and future agricultural education enrollees were white males from rural areas who had less than a B (3.00) academic average. However, regardless of enrollment status or grade level, similar factors were found to influence students' enrollment decisions. The most influential factor was whether or not agricultural education was perceived to be beneficial to students' futures. Students were also influenced by their image of agricultural education, by peers and adults, and the impact of school standards and requirements.

Teachers indicated FFA activities were the most frequently used recruitment and retention practices. However, teachers ranked classroom related activities as most effective. The majority of teachers reported they were doing nothing to recruit minority students. They felt teacher preparation programs should help prospective teachers develop an understanding of minority cultures which would encourage implementation of future minority recruitment and retention efforts.

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Chapter 1

INTRODUCTION

Throughout America's history agriculture has been a principal industry. Today agriculture accounts for 23% of America's gross national product and employs approximately 22 million people (Lierman, Orthel, Riesenbergr & Sorenson, 1989). In Pennsylvania, agriculture alone employs one fifth of the work force and is the number one industry (Pennsylvania Agricultural Statistics Service, 1986). Because of agriculture's importance to the nation and state, agricultural education has long been regarded as an essential element in America's education system (Lierman et al., 1989). With the passage of the Smith-Hughes Act in 1917, Congress supported provisions for vocational-technical education in the field of agriculture. This marked the beginning of agricultural curricula to prepare youth for careers in agriculture.

When the Smith-Hughes Act was passed, about one-third of the U.S. population lived on farms and rural America was dominated by farm businesses. Since that time agriculture has progressed from a simple agrarian industry to a complex food and fiber system. This system is constantly adjusting to new technology, urbanization, international trade policies, and an explosion in knowledge caused by sophisticated computers, biotechnical techniques, and public expectations. Today, agriculture employs 26% of America's work force, yet only 2.2% are directly involved in the actual production of food and fiber (National Research Council, 1988).

The agricultural industry of the 1980's offers over 200 career opportunities, yet in 1988 the demand for persons with expertise in agriculture exceeded the expected supply by 13% (National FFA Organization, 1988; Harris, 1988). Developing a well trained work force is critical to the industry's future. The recruitment of persons with technical agricultural skills and a working knowledge of agriculture is needed to meet these demands. Agricultural education at the secondary level plays a major role in meeting these

future personnel requirements, yet agricultural education has been experiencing a decline in enrollment. With growing concerns about declining enrollments, agricultural educators must be ready to increase and maintain enrollments to supply educated individuals for the agricultural industry.

Shrinking student enrollments, a reduced number of teachers, and termination of agricultural programs are caused by a number of factors. These factors include shifts from rural to urban economies, a negative image of the agricultural industry, and a renewed focus on basic education as suggested by the 1983 A Nation at Risk study (National Commission on Excellence in Education, 1983). Previous studies suggested there was a bias against "Vocational" education. This negative bias has had significant impact on students' decisions to enroll in vocational courses (Beck, 1987; Knight, 1987; Norris & Townsend, 1987). Misconceptions of agriculture have created poor attitudes toward agriculture and have contributed to decreased enrollments (Graham, 1987).

The Human Capital Shortages Task Force (1988) reported the following:

The expertise base which supports the U.S. food and agriculture system is seriously eroded and must be revitalized. Strategically, our nation's security is clearly dependent upon the requisite expertise to conduct the science and business of producing and distributing our future food while carefully managing our natural resources.

Today's young adults are strongly influenced by expected economic rewards associated with career alternatives. Also, our society's macro issues, ephemeral lifestyles, and occupational images projected by the mass media have a major impact on career decisions of adolescents. Therefore, food and agricultural career information and recruitment initiatives must deal with these megaforges. (p. 3)

To ensure the skills and knowledge essential to the future vitality of American agriculture, a commitment is necessary. A commitment to broaden agricultural education curricula and deal with the many factors challenging agricultural education program enrollment is essential.

Statement of the Purpose

The primary purpose of this study was to identify factors related to students' decisions to enroll in agricultural education at the secondary level. The study focused on perceptions of students, teachers, and guidance counselors regarding the identification of these factors. A secondary purpose was to identify and describe agricultural teachers' perceptions toward various recruitment and retention practices.

Objectives of the Study

For the purposes of this study, the following objectives were formulated.

1. Identify and describe the sociodemographic characteristics of 8th and 11th grade students currently enrolled, anticipating enrollment, or not enrolled in agricultural education;
2. Identify various participation and enrollment factors which impact students' decisions to enroll in agricultural education;
3. Compare perceptions of agriculture instructors and guidance counselors concerning factors which impact students' decisions to enroll in high school agricultural education;
4. Identify recruitment and retention practices frequently used by agricultural educators;
5. Determine perceptions of agricultural teachers about the success of frequently used recruitment and retention practices; and
6. Identify successful recruitment and retention practices used to recruit minority and non-traditional students into agricultural education.

Limitations of the Study

This study had the following limitations:

1. The sample was a select group (purposive) of agricultural education programs in Pennsylvania identified by a panel of experts as "good" programs.
2. The sample consisted of 13 Pennsylvania agricultural education programs. The findings should not be inferred as representative of Pennsylvania's 198 secondary agricultural education programs.
3. Students who participated in the study were selected by local agricultural education teachers.

Operational Definitions

Terms used in this study were defined as follows:

"Good" agricultural education program: A secondary, four-year agricultural education program that has shown innovative and relevant practices which reflect current technological trends in agriculture. These practices are portrayed by recruitment and retention strategies within the program.

Minority: Persons of racial groups not characteristic of the majority race in the population. Groups include American Indian, Hispanic, Black, Asian, or other racial groups not equally represented in the population.

Sociodemographic Characteristics: The race, gender, residence, academic performance, mother's/father's occupation and educational level, and occupational and educational goals of the students.

Traditional Student: Those students who are white males with a farm background.

Chapter 2

REVIEW OF LITERATURE

The purpose of this chapter is to provide a framework for identifying factors which contribute to agricultural education program enrollment. The review summarizes literature and research findings that identified factors which influenced the decline in enrollment. This review is presented in three sections. Section one emphasizes factors associated with a student's decision to enroll in agricultural education. Section two includes factors that contribute to increasing and maintaining agricultural education program enrollment. Section three presents factors affecting the enrollment of minority and non-traditional students in agricultural education.

Factors Associated with a Student's Decision to Enroll in Agricultural Education

Currently, agricultural education programs are the major means of providing public school students with instruction about agriculture. Kahler (1988) suggested that if the agricultural education program is to serve agricultural industry, and more importantly, future learners and society, it must change. He urged teachers to broaden the program's mission and establish a strong philosophical base. The mission should clearly describe the scope and breadth of the program and what contribution it will have to the learner, the school curriculum, agricultural industry, and society. Kahler further stated that the term "Vocational" has and continues to be confusing and is non-descriptive for agricultural educators, school administrators, teachers, and the public. As Knight (1987) claimed, "There is a long standing bias that promotes the idea that vocational education of any sort is for the less able students. This is often reflected in the attitude that vocational education is a good thing for someone else's children" (p. 9).

Knight (1987) also said, "Vocational agriculture programs have had and continue to have a heavy focus upon production agriculture. Since the number of farmers continues to decline, the rural economy is in a shambles, and many farmers are counseling their children to get out of farming, the traditional focus of production agriculture makes the prospect for increased numbers in traditional programs shaky at best" (p. 9). Crawford (1987) further clarified this observation, "At one time, vocational agriculture and the FFA were 'right on' in training young men and women to enter farming. Curriculum, leadership, and competitive activities centered around sending the 'boy' back to the farm. However, many of us still cling to this traditional approach even though jobs are just not there. People outside of the agricultural family are telling us that we are seen as farm boys" (p. 14).

The perception of agriculture as a career choice was found to be a stumbling block to student enrollment. Researchers at Virginia Polytechnic Institute and State University (VPI) concluded that today's students perceive agriculture as a part of the non-technical past (Constantino & Schuster, 1986). Programs must change, including the FFA, to better reflect a contemporary agricultural image rather than the traditional 'farming' image. The aims and purposes must reflect that agricultural education serves the total agricultural industry, not just farming. Traditional agriculture has been altered irreversibly and farming is being replaced by agribusiness. Agricultural education must develop an image that follows this change by projecting three-piece suits rather than bib overalls (Crawford, 1987; Moore, 1987).

As stated by Norris and Townsend (1987), there are two giant killers out there stalking agricultural education - agriculture's negative image and the "pendulum swing" back to the basics in education. They suggested that changes need to be made to improve agriculture's image because many parents and students do not see agriculture as having a positive future. They recommended dropping the terms "Vocational" and "Farmer" which often evoke negative feelings. They further encouraged educators to move away from traditional production agriculture courses. Several educators suggested updating

production agriculture by emphasizing the study of economics, agricultural policy, marketing, computer science, cooperative employment programs, and other non-traditional courses (Kahler, 1988; Knight, 1987; Multanen, 1987; Norris & Townsend, 1987).

The A Nation at Risk report (National Commission on Excellence in Education, 1983) initiated trends toward increasing the amount of concentration on academic preparation rather than in areas of vocational education. These trends often conflicted with vocational course enrollment and resulted in schools offering fewer vocational courses (Knight, 1987). Increased graduation requirements put stress on class schedules, therefore, in order to give students an opportunity to enroll in agricultural education, it was suggested that science credit be offered for agricultural education courses (Multanen, 1987; Norris & Townsend, 1987; Wilson, 1987). Pals (1987) outlined other options for combating this problem. He indicated that more flexibility can be available if an extra period is added to the daily schedule or if semester courses are offered. In addition, Pals urged programs to change course titles to improve their image.

Newcomb (cited in Herring and Norris, 1987), was quoted as saying, "A profession grows or it dies; it changes or it faces atrophy, stagnation, and slow demise. These clearly cannot be viable options. The profession must become the hotbed of experimentation in education, not the guardians of the tombs of bygone success" (p. 20). Herring and Norris (1987) concluded that, "As more and more people find the old ways of the family farm impossible, and as new technology takes over the day-to-day jobs, and as more support businesses for agriculture are created, agricultural education, in the form we know it today, may become unrecognizable" (p. 20).

An additional image problem occurs when students are told, on television, in the newspaper, and at home that agriculture is a dead and dying industry (Graham, 1987; Pals, 1987). Graham (1987) suggested the perception of American agriculture as a dying industry was one of the biggest problems found in recruiting agricultural education students.

Factors Contributing to Increasing and Maintaining Program Enrollment

While there will always be a need for people in agricultural production, there is also an underlying need for people who can apply sophisticated technology to current issues and needs in agriculture (Costantino & Schuster, 1986). Declines in rural populations have had a negative impact on agricultural program enrollment. Target groups which should be considered are urban students interested in science and technology as career choices. Costantino and Schuster (1986) recommended marketing careers and opportunities in agriculture to students looking for a college major that has promising job opportunities and involves science and technology. Many educators and researchers agree that it is necessary to market agricultural education programs with reference to understanding American agriculture and its career opportunities (Constantino & Schuster, 1987; Crawford, 1987; Knight, 1987; Mallory & Sommer, 1986; Pals, 1987).

An effective marketing strategy begins with recruitment and retention strategies. Hullman (1971) studied recruitment techniques influencing student selection of vocational - technical programs. He found a significant (.05 alpha level) correlation between the quantity of recruitment information disseminated and its relative influence upon student enrollment in vocational-technical programs. In addition, Thompson (1986) indicated that public relations activities can be used to effectively increase enrollment in agricultural education if educators include more than the prospective student sector in recruitment efforts. Thompson (1986) recommended that agricultural education teachers develop and promote activities which emphasize their program's importance within the secondary school curriculum. A key finding in the Thompson study was that school superintendents have a lower perception of the overall agricultural education programs than do teachers and students. Other researchers concluded that agricultural education programs should involve school superintendents in FFA activities because their opinions are very important for the program's direction and operation (Herren, 1987; Thompson, 1986).

Michigan State University researcher Clyde Chesney (1980) found that mass media was the most helpful tool in initially attracting college students. He also found that the use of public business professionals gave students a better grasp of real life situations. The personal contact and exposure to successful professionals were beneficial to student recruitment. He contended that faculty and currently enrolled students have the ultimate responsibility of persuading prospective students to enroll in non-traditional programs.

Revision of brochures and written materials to include pictures of traditional as well as non-traditional students is believed successful to program recruitment. Brochures, including agricultural career information, are also beneficial to recruitment programs (Crawford, 1987). Recruitment programs need to emphasize skills, knowledge, and attitudes of the total agricultural industry, not only the production sector. The examination of future career opportunities in agriculturally related occupations was strongly suggested by several researchers as a positive recruitment and retention strategy (Crawford, 1987; Knight, 1987; Welton, 1986).

Graham (1987), an agriculture instructor from Missouri, stated that teaching career awareness and encouraging students to begin pursuing a career path are major parts of his job. He believes that understanding students' individual interests and career aspirations serve as important recruitment and retention activities in an agriculture program.

Martin (1987) recommended that programs have a strong working relationship with the local community. Agricultural education gets its life from the community it serves. To build a positive link between the school and community, Martin indicated that the agricultural education program should consider influences and resources available from people in the community. Strong public relations is tied to involvement and positive publicity regarding that involvement (Martin, 1987). In addition, to show off a program, agricultural education teachers and students should work with community organizations, and provide assistance to give positive perceptions of the program (Deeds & Stevens, 1987).

Because the FFA organization is commonly viewed as a motivator and powerful recruitment device, Knight (1987) suggested that it not be overlooked, but utilized to increase visibility of the agricultural education program and serve as an effective recruitment tool.

Factors Affecting Enrollment of Minority and Non-traditional Students

Sproles (1986) investigated reasons students give for enrolling in agricultural education. Non-traditional students were less likely than traditional students to perceive their program as providing a good job with a good income or as a means of obtaining a job. In general, traditional respondents chose their vocational education program for more varied reasons than did non-traditional respondents. Influential individuals were perceived as less helpful and not as supportive by the non-traditional students completing programs. Friends of respondents were more likely to support traditional choices than non-traditional choices.

With the transformation of agriculture from a rural based orientation to one that is more urban and industrial based, many black Americans moved away from production agriculture. In 1920, nearly one million blacks were involved in farming. Straquadine (1987) reported that approximately 6%, or less than 46,000 were involved in farming in 1974. He concluded that discrimination against blacks, and the existence of a largely segregated society in the South contributed to blacks leaving the farm. Black farmers, in particular, experienced problems obtaining education and information, getting credit, and keeping or proving land ownership.

Several researchers indicate that the recruitment of minority students is difficult because of the perception these students have of agriculture. They perceive agricultural careers as farming. Minority students are constantly reminded of their ancestors' occupations--occupations which have always been associated with slavery and migratory labor (Coffey, 1978; Larke, 1987). Coffey (1978) concluded that if black students are to

become active in agricultural education, a teacher must modify the curriculum to include non-production agriculture.

In a study focused on the preparation secondary agriculture teachers received regarding minority populations, Schmitt (1970) concluded that it is important to recruit teachers from the ranks they serve. These teachers can serve as role models and possibly aid in increasing minority enrollment. In a survey of 77 institutions preparing agricultural education teachers, Schmitt found that many of the institutions responding had no separate preparation or experiences for prospective teachers of minority youth.

Several educators concluded that minority students need to be understood and that their needs must be met in order to recruit and retain them in the program. They suggested that teacher educators could be introduced to minority student needs to improve the understanding of minority students. This knowledge would give them a better basis for increasing minority enrollment (Barr & Larke, 1987; Chesney, 1980; Coffey, 1978; Larke, 1987; Schmitt, 1970).

Many ideas and strategies outlined in the two previous sections are vital to minority enrollment. Non-whites indicated that demonstrations, television programs, magazines, and newspapers enhanced their choice to enroll in agricultural education (Chesney, 1980). Whites ranked these same factors as being least important. Minority students in the Chesney study indicated that clergy, high school coaches, and principals were least influential and that participation in leisure and recreational activities had the most impact.

As a group, minorities are especially under-represented at a professional level in agriculture. This is partially due to negative perceptions minorities have of agriculture. Positive role modeling is one of the most effective ways to begin reversing negative perceptions (Barr & Larke, 1987). The impact of role models can't be stressed enough in the recruitment and retention of non-traditional students. Successful persons can serve as proof to other minority and under-represented persons that programs in agriculture are possibilities for careers and achievement. The utilization of role models and program

alumni is an approach to be used for all prospective students no matter their race, creed, or color (Coffey, 1978; Elliot, 1987; Larke, 1987; Knight, 1987; Pals, 1987; Schmitt, 1970).

Overall, for agricultural education to be attractive to minorities, teachers must make their curricula relevant to the needs of students. Relevancy includes both instructional content as well as ethnic sensitivity. By making activities relevant to all students, Coffey (1978) concludes that non-traditional and traditional student enrollment will increase.

Summary of Literature Reviewed

Based upon the review of literature, there are many factors which apparently contribute to a decline in agricultural education program enrollment. Successful recruitment and retention practices are needed and more emphasis must be placed on minority student enrollment.

An image is often referred to as a perception or belief, an attitude, or opinion. Students, parents, and school administrators often view agriculture as a dying industry which only employs farmers in production occupations. Agriculture and agricultural education programs are advancing in new directions and educators must be a part of this change in order to face negative perceptions often associated with agriculture and agricultural education programs. With the pendulum swinging back to the basics and the negative image of vocational education, agricultural educators are encouraged to move away from traditional production courses. The literature that was reviewed suggests that it is necessary to incorporate science, agribusiness, and more non-traditional courses into agricultural education to help change the image of the program. Farming is being replaced by agribusiness. The programs must change to reflect the total agricultural industry, not just farming (Crawford, 1987; Moore, 1987). A new image and a positive attitude about agricultural education should result if proper steps for change are taken.

Through positive public relations efforts in the areas of student recruitment and retention, the community and future students should have a better understanding of

agriculture's opportunities and the agricultural education program. Public relations activities can be effectively used to increase enrollment if more than the prospective student is involved in recruitment efforts.

Recruitment activities may include a variety of methods. Targeting urban students interested in pursuing a science or technology career was suggested as a viable strategy by Costantino and Schuster (1986). Literature reviewed suggested that brochures and written recruitment materials be updated to represent science and technology career opportunities in agriculture. The FFA Organization should also continue to be used as a recruitment and retention device (Knight, 1987).

The restructuring of agricultural education programs to include more than traditional students interested in production agriculture must be addressed. Successful examples of these changes are required to help improve agricultural education programs. Recruitment of minorities is often difficult because of the perception that these students have of agriculture. Many perceive agricultural careers as farming and are reminded of their ancestors' occupations--occupations which have always been associated with migratory labor and slavery (Coffey, 1978; Larke, 1987). Non-production agriculture must be included in the programs to encourage minority enrollment.

Cultural differences and minority student needs should be understood in order to recruit and retain them in a program. The literature also suggested that the use of role models was a successful minority student recruitment and retention strategy. Ethnic sensitivity and relevancy to instructional content may help to attract minority students to agricultural education programs (Coffey, 1978).

The review of literature points to several areas which need to be changed. Agricultural educators must be ready to revise their programs and address factors that impact students' decisions to enroll in agricultural education. Examples of such changes and the identification of the factors related to the changes are necessary to improve agricultural education programs.

Chapter 3

RESEARCH METHODOLOGY

This study was conducted using descriptive survey research procedures. The study was conducted in two parts. Part I of the study investigated factors that impacted a student's decision to enroll in agricultural education. Part II explained successful recruitment and retention practices frequently used to attract and retain students in agricultural education programs.

Population and Sample

The target population consisted of 198 secondary agricultural education programs in Pennsylvania. Purposive sampling was used to insure geographic and demographic representation of "good" agricultural education programs throughout Pennsylvania. Teachers from 76 programs were selected by a panel of experts to participate in the study. The panel consisted of two associate professors and one instructor from The Pennsylvania State University Agricultural and Extension Education Department, and Pennsylvania's State Agricultural Education Advisor.

The study was conducted in two parts. Part I focused on the identification of factors that affected students' agricultural education enrollment decisions. The top 13 agricultural education programs were selected by the panel from the 76 "good" agricultural education programs identified. Agricultural teachers in each of the 13 schools were asked to identify students to participate in the study. Each teacher identified 15 students using the following criteria: (1) five 11th grade students enrolled in agricultural education, (2) five 11th grade students with an identified interest in agriculture but who were not enrolled in agricultural education, and (3) five 8th grade students. These students responded to a series of statements concerning their agricultural education enrollment decision and their perceptions of the program. In addition, all 13 teachers participating in the study and two

guidance counselors from each participating school were surveyed to obtain their perceptions of factors that impact students' decisions to enroll in agricultural education.

Part II of the study involved a survey of the remaining 63 agricultural education teachers. The teachers were asked to indicate the recruitment and retention activities they believed to be (a) most effective and (b) used most often in their programs. The teachers were also asked questions about minority recruitment efforts and the Supervised Agricultural Experience (SAE) programs of their students.

Instrumentation

Based on the review of literature, five instruments were adopted from the national study Factors Affecting Past and Prospective Enrollments in Secondary School Agricultural Education Programs and FFA Membership (Scanlon et al., 1989). This study was conducted by agricultural education researchers at The Pennsylvania State University in 1989 (see Appendices A & B for instruments).

Three instruments used in Part I of the study collected sociodemographic data and occupational and educational goals for each student. In addition, students responded to a series of statements concerning their decision to enroll in agricultural education and their perception of agricultural education and the FFA. Key personnel responded to a series of statements that gathered their perceptions of factors which impacted students' decisions to enroll in high school agricultural education. These statements differed for each group of students. Pilot testing of the three instruments yielded Cronbach alpha reliability coefficients ranging from .71 to .99.

A teacher survey instrument was used in Part II of the study. This instrument was pilot tested with the four member panel of experts to establish its content validity. The instrument asked the teachers to evaluate a series of 64 recruitment practices. The teachers indicated how effective they perceived each practice to be and how frequently they used each practice. The 64 practices were categorized into nine areas: personal contacts; national

FFA organization materials; local program materials; school administrators, faculty, and school board public relations; local agriculture, community service, and professional organization activities; interschool programs; media; classroom activities; and local and state FFA organization activities. In addition, teachers were asked to identify minorities represented in their programs and to describe recruitment practices that were specifically targeted at recruiting minorities or non-traditional students.

Data Collection

The data were collected from March to May, 1989. Prior to beginning the data collection process, the researcher called the 13 teachers selected for Part I to solicit their commitment to participate and to explain the goals and objectives of the study. After securing their commitment, a data collection schedule and a letter of confirmation were mailed to each teacher (see Appendix C). To reduce biases the researcher administered the questionnaires to all students, teachers, and counselors participating in Part I of the study.

All 76 teachers chosen for the study were asked to complete a recruitment and retention survey. Teachers from the 13 programs participating in Part I of the study were given a survey instrument the day data were collected from their school. The 63 teachers not participating in Part I of the study were sent letters asking for their cooperation. The goals and objectives of the study were explained in the cover letter (see Appendix C). A recruitment and retention survey instrument and a prepaid return envelope were provided for all 76 teachers. A follow-up letter was sent to late respondents three weeks later to secure their completed questionnaires (see Appendix C). Sixty-six percent of the teachers responded to the survey (50 of 76 teachers). Based on frequency comparisons, non-respondents appeared to be no different than respondents on selected demographic variables.

Data Analysis

The data were processed using the Statistical Package for the Social Sciences (SPSSx-3.1) available through the computing facilities of The Pennsylvania State University. Descriptive statistics were used in accomplishing the objectives.

Chapter 4

FINDINGS

Introduction

This study sought to identify factors which affect students' decisions to enroll in agricultural education at the secondary level. The findings contained in this chapter are presented in two sections and are reported as they relate to the objectives outlined in Chapter 1 (p. 3).

Part I of the study focused on factors that influenced students' decisions to enroll or not enroll in secondary level agricultural education programs. Sociodemographic data, occupational and educational goals, and perceptions about agricultural education were provided by 200 students participating in the study. In addition, 12 agricultural education teachers and 20 guidance counselors responded to a survey that gathered their perceptions of factors which impact students' decisions to enroll in agricultural education.

Findings for Part II of the study relate to recruitment and retention practices that agricultural education teachers perceived to be effective and frequently used in their programs. The 50 agriculture teachers who responded to the survey also provided information regarding practices used to recruit minority and non-traditional students into agricultural education.

Part I--Enrollment Decisions

The purpose of Part I was to study factors that influenced students' decisions to enroll in secondary level agricultural education programs. Students, teachers, and guidance counselors participated in this part of the study which dealt with objectives 1 through 3. The survey instruments used in Part I of the study are included in Appendix A.

Objective 1: *Identify and describe the sociodemographic characteristics of eighth and eleventh grade students currently enrolled, anticipating enrollment, or not enrolled in agricultural education.*

Data for students participating in the study were summarized according to students' enrollment decisions, grade levels, and sociodemographic characteristics. Data provided by students indicated that most of the eighth and eleventh grade students who were future or current agricultural education enrollees were white males. These 94 individuals could be considered traditional agricultural education students. Historically, large numbers of females and minorities have not been part of agricultural education enrollments. Additional data which focused on variables related to students' education, family, and career goals were analyzed to accomplish objective one. These findings are presented using student groups designated by grade level and agricultural education enrollment decisions.

Enrollment Decision by Academic Average,
Desired Occupation, and Postsecondary Education Intent

Academic averages for the students surveyed are shown in Table 1. Twenty-one percent of the eighth graders enrolling in agricultural education had a B (3.00) academic average or higher while 64% of the eighth graders not enrolling in ninth grade agricultural education had a B or higher academic average. For eleventh graders who enrolled, 32% had a B or higher academic average and 58% of eleventh graders not enrolled in agricultural education had a B or higher academic average.

Data in Table 1 show those students who were enrolled or planned to enroll in agricultural education were more interested in agricultural careers. For eighth graders enrolling in agricultural education, 60% indicated an interest in agricultural careers, while 17% of eighth graders not enrolling showed interests in agricultural occupations. Over half of the eleventh graders enrolled indicated a desire to pursue an agricultural career but, only 3% of eleventh grade non-enrollees indicated that they have an agricultural career interest.

Table 1

Eighth and Eleventh Grade Students' Enrollment Decision by Academic Average, Desired Occupation, and Postsecondary Education Intent.

	<u>Academic Average</u>				<u>Desired Occupation</u>				<u>Postsecondary Intent</u>			
	<u><B *</u>		<u>≥ B **</u>		<u>Ag</u>		<u>Non-Ag</u>		<u>Ag</u>		<u>Non-Ag</u>	
	f	%	f	%	f	%	f	%	f	%	f	%
<u>Eighth Graders</u>												
Will enroll (n=41)	30	78.9	8	21.1	18	60.0	12	40.0	3	20.0	12	80.0
Will not enroll (n=27)	9	36.0	16	64.0	4	17.4	19	82.6	2	12.5	14	87.5
<u>Eleventh Graders</u>												
Enrolled (n=68)	46	67.6	22	32.4	30	55.5	24	44.4	11	32.4	23	67.6
Not enrolled (n=64)	27	42.2	37	57.8	2	3.4	56	96.6	0	0.0	53	100.0
Total	112	57.4	82	42.6	54	32.7	111	67.3	16	13.6	102	86.4

Frequencies and percentages reported exclude missing cases.

* <B - Academic Average is below a B (3.00) letter grade.

** ≥B - Academic Average is a B (3.00) letter grade or higher.

Although the majority of students in the sample were interested in pursuing postsecondary education, only 14% indicated having an interest in postsecondary agricultural education. For eighth graders enrolling in agricultural education, 20% were interested at the postsecondary level. Thirteen percent of the eighth graders not enrolling were interested in postsecondary agricultural education. For eleventh graders enrolled, 32% showed an interest at the postsecondary level, yet none of the eleventh grade non-enrollees indicated they would pursue postsecondary agricultural education.

Occupational interests of eleventh graders enrolled in agricultural education are presented in Table 2. Students indicated their degree of interest in various occupational areas in agriculture, with most interest levels falling between "slight" and "moderate." Students had the highest degree of interest in wildlife conservation and protection, followed by part-time farming and managing or owning an agricultural business. The least amount of interest was in agricultural occupations dealing with floriculture and food science.

Enrollment Decision by Current Residence and Parents' Occupation

About one-third of all students sampled lived on farms. Thirty-six percent of eighth graders planning to enroll in agricultural education were from farms while 34% of those not planning to enroll were from farms. For the eleventh graders enrolled, 43% lived on farms, but only 9% of eleventh graders not enrolled were from farms (see Table 3).

Students were also asked to indicate their parents' occupations. The majority of parents were employed outside of agriculture. Those eighth graders planning to enroll indicated that 21% of their fathers and 15% of their mothers were employed in agricultural occupations, while eighth grade non-enrollees reported 25% of their fathers and 4% of their mothers as being employed in agriculture. About one-third of eleventh graders enrolled in agricultural education reported their fathers had agricultural occupations and 12% of their mothers were employed in agriculture. In contrast, eleventh grade non-enrollees indicated very few of their parents were employed in an agricultural occupation (see Table 3).

Table 2

Mean and Standard Deviations for Occupational Interests of Eleventh Grade Students Currently Enrolled in Agricultural Education (n = 68).

Occupational Interests	Mean	SD
To work in wildlife protection/conservation	2.87	1.09
To be engaged in part-time farming	2.72	.93
To manage/own agricultural business	2.64	1.13
To be engaged in full-time farming	2.61	1.14
To be employed in agricultural mechanics	2.57	1.01
To work in an agricultural-related business owned/operated by family	2.56	1.14
To be employed by a farm owner/operator	2.48	1.11
To be employed as a farm manager	2.45	1.11
To raise a few head of livestock/crop in family garden	2.41	1.02
To work in forestry service/management	2.34	1.07
To be employed by an agricultural supplier	2.30	.98
To be employed in agricultural marketing/commodities	2.05	.99
To be employed in agricultural education	1.99	1.05
To be employed in veterinary medicine	1.94	.99
To be employed in international agriculture	1.91	.88
To work in landscape/nursery/turf management	1.88	1.02
To be employed full time in a non-agricultural occupation or career	1.88	1.06
To be employed in agricultural communications	1.87	.87
To be employed in agricultural research/emerging technology	1.87	.95
To work in greenhouse production	1.78	.98
To work in floriculture/floral management	1.59	.93
To work in food science/technology	1.56	.86
To be a full-time homemaker	1.52	.99

Scale: 4 = Highly interested
 3 = Moderately interested
 2 = Slightly interested
 1 = Not interested

Table 3

Eighth and Eleventh Grade Students' Enrollment Decision by Current Residence and Parents' Occupation.

	<u>Current Residence</u>				<u>Fathers' Occupation</u>				<u>Mothers' Occupation</u>			
	<u>Farm</u>		<u>Non-Farm</u>		<u>Ag</u>		<u>Non-Ag</u>		<u>Ag</u>		<u>Non-Ag</u>	
	f	%	f	%	f	%	f	%	f	%	f	%
<u>Eighth Graders</u>												
Will enroll (n=41)	14	35.9	25	64.1	7	20.6	27	79.4	5	14.7	29	85.3
Will not enroll (n=27)	9	33.9	18	66.7	6	25.0	18	75.0	1	4.3	22	95.7
<u>Eleventh Graders</u>												
Enroll (n=68)	29	42.6	39	57.4	22	34.4	46	71.9	7	11.5	54	88.5
Not enrolled (n=64)	6	9.4	58	90.6	4	6.6	57	93.4	2	3.2	60	96.8
Total	58	29.3	140	70.7	39	20.9	148	79.1	31	17.2	149	82.8

Frequencies and percentages reported exclude missing cases.

Objective 2: Identify various participation and enrollment factors which impact students' decisions to enroll in agricultural education.

Students responded to a series of statements concerning their perception of agricultural education. These statements were formulated in a national study conducted for the National FFA Organization (Scanlon et al., 1989) and were based on theories concerning individuals' decisions to participate in or join an organization. Factor analysis was used in the national study to identify four factors which affected students' decisions to enroll in agricultural education: (1) future value of agricultural education, (2) image of agricultural education, (3) role of significant others, and (4) school standards and requirements. Several key statements that collectively measured a factor were identified for each factor.

The results of the national study's factor analysis were used as a basis for the Pennsylvania study (see Appendix D). Each factor's mean score for the national and state studies were compared regarding their impact on a student's decision to enroll in agricultural education (see Tables 4, 5, 6 and 7). Eighth grade students participating in the study were divided into two groups based on their decision to enroll or not enroll in agricultural education. Eleventh graders who participated were also analyzed as two groups, those who were enrolled and those who were not enrolled.

Means scores computed on the Pennsylvania data showed little variation from the national study's mean scores. The amount of agreement or disagreement for each statement identified in the national study was similar to that found at the state level.

Future/Current Enrollees

Data collected in the study suggested that eighth grade students planning to enroll in agricultural education are primarily influenced by the value they perceive the program to have in their future. In addition, the image which they have of the program is also a major factor in their decision to enroll. A secondary factor identified as impacting their enrollment decision was the role of significant others (see Table 4).

Table 4

Means and Standard Deviations of Factors Identified as Influential in Eighth Graders' Decision to Enroll in Agricultural Education.

Statements Comprising Factors	<u>National (n=138)</u>		<u>Pennsylvania (n=41)</u>	
	Mean	SD	Mean	SD
<u>Factor 1 - Influence of Future Value</u>	4.35	0.11	4.27	0.11
Agricultural education will help me prepare for the future	4.37	0.72	4.13	0.62
Agricultural education will benefit me later in life	4.48	0.70	4.39	0.67
Agricultural education will help prepare me for a career in agriculture	4.21	0.79	4.28	0.60
<u>Factor 2 - Role of Significant Others</u>	3.12	0.48	3.08	0.34
Counselor suggested I take agricultural education	2.54	0.97	2.56	0.95
Parent(s)/guardian suggested I take agricultural education	3.37	1.24	3.27	1.18
Friends suggested I take agricultural education	2.80	1.17	3.03	1.21
I like the teachers	3.77	1.02	3.46	0.60
<u>Factor 3 - Perceived Image of Agricultural Education</u>	4.32	0.15	4.13	0.22
I like the classes	4.22	0.68	3.95	0.64
Agricultural education is for farm and non-farm kids	4.22	0.94	4.00	0.83
Agricultural education classes can help both males and females	4.53	0.62	4.45	0.60

Scale: 5=Strongly agree; 4=Agree; 3=Undecided; 2=Disagree; 1=Strongly disagree

Table 5

Means and Standard Deviations of Factors Identified as Influential in Eleventh Graders' Decision to Enroll in Agricultural Education.

Statements Comprising Factors	<u>National (n=138)</u>		<u>Pennsylvania (n=68)</u>	
	Mean	SD	Mean	SD
<u>Factor 1 - Influence of Future Value</u>	4.11	0.40	4.05	0.23
Agricultural education will benefit me later in life	4.54	0.71	4.35	0.77
Agricultural education will help me prepare for the future	4.33	0.81	4.25	0.84
Agricultural education will prepare me for a career	4.18	0.89	4.21	0.87
Agricultural education will help me improve my relations with others	3.85	0.96	3.71	0.79
Agricultural education will help me become a better citizen	3.84	0.90	3.72	0.84
I like the classes	4.27	0.64	4.23	0.70
I can still meet college preparatory requirements and enroll in agricultural education	4.11	0.87	3.88	1.15
<u>Factor 2 - Role of Significant Others</u>	2.92	0.28	2.80	0.17
Parent(s)/guardian suggested I take agricultural education	3.29	1.22	3.05	1.33
Friends suggested I take agricultural education	2.87	1.22	2.69	1.24
Counselor suggested I take agricultural education	2.61	1.16	2.67	1.13

Scale: 5=Strongly agree; 4=Agree; 3=Undecided; 2=Disagree; 1=Strongly disagree

Table 6

Means and Standard Deviations of Factors Identified as Influential in Eighth Graders' Decision Not to Enroll in Agricultural Education.

Statements Comprising Factors	National (n=59)		Pennsylvania (n=27)	
	Mean	SD	Mean	SD
<u>Factor 1 - Influence of Future Value</u>	3.17	0.25	3.15	0.17
I didn't want to join FFA	3.43	1.06	3.26	1.43
I don't see how it would be helpful to me	3.26	1.21	3.26	1.10
The classes are too production oriented	2.75	1.07	2.85	1.23
It wouldn't be helpful to me	3.24	1.06	3.22	1.25
<u>Factor 2 - Perceived Image of Agricultural Education</u>	2.13	0.13	2.52	0.23
Agricultural education is for farm boys	2.05	0.92	2.82	1.36
Agricultural education is for farm kids	2.07	0.91	2.19	0.88
Agricultural education is for young males	2.03	0.79	2.48	1.12
I didn't want to be the only minority in class	2.35	1.15	2.59	1.01
<u>Factor 3 - Role of Significant Others and School Standards</u>	2.41	0.30	2.19	0.27
My friends said not to take agricultural education	1.97	0.83	1.82	0.83
Agricultural education conflicts with high school graduation requirements	2.62	0.97	2.33	1.11
The counselor did not suggest I take agricultural education	2.63	1.10	2.44	1.12

Scale: 5=Strongly agree; 4=Agree; 3=Undecided; 2=Disagree; 1=Strongly disagree

Table 7

Means and Standard Deviations of Factors Identified as Influential in Eleventh Graders' Decision Not to Enroll in Agricultural Education.

Statements Comprising Factors	National (n=155)		Pennsylvania (n=64)	
	Mean	SD	Mean	SD
<u>Factor 1 - Influence of Future Value</u>	3.04	0.20	3.40	0.41
It wouldn't be helpful to me	3.24	1.28	3.79	1.08
I don't see how it would be helpful to me	3.23	1.20	3.75	1.08
The classes are too production oriented	2.77	1.24	2.77	1.17
I didn't want to be in FFA	2.93	1.20	3.28	1.22
<u>Factor 2 - Perceived Image of Ag Ed</u>	2.10	0.10	2.48	0.20
I didn't want to be the only minority in class	1.99	1.06	2.26	1.26
Agricultural education is for farm boys	2.27	1.09	2.78	1.22
Agricultural education is for farm kids	2.07	0.94	2.55	1.54
Agricultural education is for young males	2.08	1.11	2.34	1.12
<u>Factor 3 - Role of Significant Others</u>	2.68	0.54	2.90	0.36
I was not encouraged by counselor to take agricultural education	3.25	1.22	3.39	1.26
There isn't enough emphasis on emerging technology/ research in agricultural education	2.82	0.97	2.81	0.97
My friends suggested not to take agricultural education	1.96	0.92	2.51	1.26

Scale: 5=Strongly agree; 4=Agree; 3=Undecided; 2=Disagree; 1=Strongly disagree

Eleventh graders currently enrolled in agricultural education were also strongly influenced by their perceived future value of the agricultural education program. This factor was comprised of statements in addition to those which comprised the eighth graders' factor (see Table 5). These statements contributed to the impact of the program's future value. A secondary influence was shown by the role of significant others which included friends, parent(s)/guardian(s), or counselors.

Future/Current Non-Enrollees

Factors identified by eleventh grade students not enrolled and eighth grade students who will not enroll were similar, although a few statements comprising each factor differed (see Tables 6 and 7). However, the influence that each of the four factors had on students' enrollment decisions was less significant for non-enrollees than for students enrolled or planning to enroll.

Eighth graders not planning to enroll indicated the influence of the program's future value impacted their enrollment decision (see Table 6). The role of significant others, plus school standards and requirements, also had some impact on their decision to enroll. Statements such as, "I will not enroll in agricultural education in high school because it is for: 'farm boys,' 'young males,' 'farm kids,'" were key statements comprising the perceived image of agricultural education. This factor was not as influential as agricultural education's perceived future value or the role of significant others.

Perceptions of eleventh grade non-enrollees were consistent with eighth grade non-enrollees' perceptions. Like eighth grade non-enrollees, the influence of agricultural education's future value had the most influence on their decision not to enroll (see Table 7). The role of significant others such as friends and counselors also influenced enrollment decisions. The agricultural education program's perceived image was another factor considered by non-enrolled eleventh graders to have some influence on their decision to enroll in agricultural education.

Objective 3: *Compare perceptions of agricultural education teachers and guidance counselors concerning factors which impact students' decision to enroll in high school agricultural education.*

Agricultural education teachers and student guidance counselors were asked to provide their opinions relative to 32 factors (see Appendix A) which might impact students' agricultural education enrollment decisions. Table 8 shows the statements both agriculture teachers and guidance counselors felt were moderately to highly influential in students' decision to enroll in agricultural education.

There was not significant agreement (Spearman's $Rho=.57$; $p>.05$; $n=9$) between teachers' ranking and the counselors' ranking of factors which influenced students' decisions to enroll in agricultural education.

Teachers perceived that having friends enrolled in the program was the most influential factor affecting students' enrollment decisions. However, counselors ranked this factor sixth and perceived a student's interest in working with animals, plants, machinery, and/or nature to be most influential. Counselors perceived previous agricultural work experience as having an impact on students' enrollment decisions, but teachers did not perceive this factor to be as influential. The "hands-on" approach offered in agricultural education was perceived by both teachers and counselors to have moderate impact on enrollment decisions.

Part II--Recruitment and Retention Practices

Data presented in this section reflect opinions of Pennsylvania agricultural education teachers regarding the use of various recruitment and retention practices. Teachers surveyed were from schools geographically representative of Pennsylvania and considered to be strong agricultural education programs. Fifty teachers (66%) responded to the recruitment and retention survey (see Appendix B).

Table 8

Means, Standard Deviations, and Rankings for Factors Identified by Agricultural Education Teachers and Guidance Counselors that Moderately to Highly Influenced Students' Decisions to Enroll in Agricultural Education.

Factor	Teachers n = 13			Counselors n = 20		
	Mean	SD	Rank	Mean	SD	Rank
They like the "hands-on" approach to training offered in the agriculture program.	3.33	.49	2	3.45	.51	3
They have friends who enjoy agriculture work.	3.00	.60	8	3.20	.77	7
They had previous experience in agriculture work.	3.08	.51	6	3.45	.76	3
They have friends who are enrolled in this program.	3.50	.67	1	3.25	.91	6
They like to work with animals, plants, machinery and/or nature.	3.33	.65	2	3.70	.47	1
They became interested in this program through FFA chapter recruitment activities and encouragement from current members.	3.00	.60	8	3.05	.76	9
They like being with other students who share the same interests.	3.17	.39	4	3.20	.61	7
The agricultural education program is well respected in the school and community.	3.08	.29	6	3.35	.75	5
Previous family members had been enrolled in the program.	3.17	.58	4	3.55	.61	2

Spearman's Rho = .57; $p > .05$; $n = 9$.

Scale: 4 = Highly influences students' decision to enroll
 3 = Moderately influences students' decision to enroll
 2 = Little influence on students' decision to enroll
 1 = No influence on students' decision to enroll

Profile of Schools

The 50 teachers who participated in the study represented high school enrollments that ranged from 42 to 2,000 students. FFA membership ranged from 10 to 595 members and enrollment in agricultural education ranged from 10-999 students. Female enrollment in agricultural education ranged from 0-288. Six teachers responded that no female students were enrolled.

Teacher Profile

Teachers provided data regarding whether they had been enrolled in high school agricultural education, how many years they had taught, where they were reared, their highest level of education, and where they obtained their university degree (s). Seventy-eight percent of the teachers indicated they were reared in rural, farm, or ranch settings. The majority (63%) of teachers had been enrolled in agricultural education and were FFA members during high school. Eight percent of the teachers reported that they have doctoral degrees and 46% reported they had a master's as their highest degree. Over 80% of the teachers indicated they had received their most recent degree from The Pennsylvania State University. Most teachers responding had taught agriculture from 10-16 years, although a range of 1-37 years of agricultural education teaching was reported.

Recruitment and Retention Practices Frequency of Use and Effectiveness

Teachers evaluated 64 recruitment practices regarding effectiveness and frequency of use in their programs. The practices were grouped into nine categories. Mean scores for each category were calculated and used to rank categories from most effective and most frequently used to least effective and least often used.

Objective 4: Identify recruitment and retention practices frequently used by agricultural educators.

There was a significant agreement between the Pennsylvania teachers' ranking and the national agricultural education teachers' ranking for the frequency of use and the nine recruitment categories (Spearman's $Rho = .73$; $p \leq .05$; $n=9$). Both groups of teachers ranked "FFA activities" and "school administration, faculty and school board public relations" as the two most frequently used recruitment activity categories (see Table 9).

Objective 5: Determine perceptions of teachers about the effectiveness of frequently used recruitment and retention practices.

The Pennsylvania teachers and the national sample provided a ranking for the effectiveness of nine categories of recruitment practices. As shown in Table 10, the two groups were in high agreement on the rank order for the nine categories (Spearman's $Rho = .88$, $p \leq .05$, $n=9$). Both groups of teachers perceived "FFA activities," "classroom activities," and "school administration, faculty and school board public relations" as the three most effective recruitment practice categories.

It is important to consider to what extent teachers use recruitment practices they perceive to be most effective. Data collected in this study suggest that teachers in Pennsylvania are not using the recruitment and retention practices they perceive to be most effective. When one examines how teachers ranked the recruitment practices used in Table 9 and how they ranked the same practices in terms of effectiveness (see Table 10), the two rankings don't agree (Spearman's $Rho = .52$; $p > .05$; $n=9$). In contrast, teachers in the national study tend to use the recruitment practices they perceive to be most effective. When one examines how teachers in the national study ranked the recruitment practices used (see Table 9) and how they ranked the same practices in terms of effectiveness (see Table 10), the two rankings were in agreement (Spearman's $Rho = .95$; $p \leq .05$; $n=9$).

Table 9

Means, Standard Deviations, and Rankings for Perceived Frequency of Use of Nine Recruitment Practice Categories.

Category	Teachers					
	Pennsylvania			National		
	Mean	SD	Rank	Mean	SD	Rank
	n= 50			n= 71		
FFA organization activities	2.41	.33	1	2.54	.28	1
School administration, faculty and school board public relations	2.25	.34	2	2.26	.36	2
National program material	2.13	.55	3	2.05	.50	6
Interschool programs	2.07	.40	4	2.08	.34	5
Classroom activities	2.04	.33	5	2.20	.37	3
Local agriculture community service and professional organizations' public relations	1.99	.39	6	1.83	.41	8
Local program material	1.89	.42	7	2.17	.34	4
Media	1.75	.37	8	1.82	.33	9
Personal contacts	1.73	.43	9	1.96	.36	7

Spearman's Rho = .73; $p \leq .05$; $n=9$.

Likert Scale: 3 = Always used
 2 = Sometimes used
 1 = Never used

Table 10

Means, Standard Deviations, and Rankings for Perceived Effectiveness of Nine Recruitment Practice Categories.

Category	<u>Teachers</u>					
	<u>Pennsylvania</u>			<u>National</u>		
	Mean	SD	Rank	Mean	SD	Rank
	n= 50			n= 71		
Classroom activities	2.43	.34	1	2.38	.31	3
FFA organization activities	2.40	.33	2	2.50	.37	1
School administration, faculty and school board public relations	2.29	.32	3	2.43	.30	2
Interschool programs	2.24	.41	4	2.21	.34	6
Local program materials	2.20	.43	5	2.36	.38	4
Personal contacts	2.15	.37	6	2.32	.35	5
Local agriculture community service and professional organization public relations	2.07	.33	7	2.11	.36	8
National program material	2.05	.47	8	2.12	.41	7
Media	2.04	.36	9	2.08	.38	9

Spearman's Rho = .88; $p \leq .05$; $n=9$.

Likert Scale: 3 = Very effective
 2 = Some effectiveness
 1 = Not effective

Teachers were asked to elaborate on the most effective recruitment practices used in their programs. Teachers listed a range of activities with the following six activities most frequently indicated as being successful recruitment activities at the local level.

1. Teacher's interest in students--Personal and individualized instruction.
2. Including students and alumni in recruitment efforts.
3. Making presentations to middle schools.
4. Maintaining a strong agricultural education program and FFA chapter.
5. Delivering a broadened curriculum to include more technology and non-production agriculture.
6. Having positive support for the program from the local school counselor(s).

Within the nine categories, the ten individual recruitment practices that Pennsylvania teachers perceived to be most frequently used and most effective are shown in Table 11. Several activities always used by at least one-half of the teachers were not perceived to be very effective. For example, 78% of the teachers always encourage 100% FFA membership, but only 35% perceived this activity as being a very effective recruitment strategy. Three-fourths of the teachers always provide school libraries with the national FFA magazine (FFA New Horizons), but only one-half of the teachers believed this activity was very effective in student recruitment or retention.

More than 50% of the teachers indicated that obtaining science credit for agricultural education courses and offering field trips to modern agricultural operations were very effective recruitment and retention activities. However, only 40% of the teachers reported that they implemented these activities in their programs.

Teachers also identified recruitment techniques which they planned to implement in the future. These activities included developing and using audio visuals, beginning a junior high school FFA chapter, and teaching agricultural orientation classes to eighth graders.

Table 11

Top Ten Recruitment Practices Perceived by Teachers to be the Most Frequently Used and Most Effective.

Practice	Teachers' Perceptions (n=50)			
	Always Used		Very Effective	
	Frequency	Percent	Frequency	Percent
Encourage participation in FFA organization contests	42	86	33	67
Encourage attendance at district, state, regional and national activities	40	82	30	61
Encourage 100% FFA organization membership	38	78	17	35
Involve students in FFA awards programs: leadership, proficiency, computers in agriculture, scholarships, etc.	37	76	30	61
Provide school libraries with the national FFA magazine	36	75	13	28
Report and advertise activities in local and regional newspapers	33	67	20	42
Present recruitment presentation to eighth grade students	31	63	24	50
Sponsor national FFA week activities in schools and community	31	62	20	42
Utilize an agricultural education advisory committee made up of agriculture producers, agribusiness people, community leaders, etc.	28	57	21	43
Incorporate new technological ideas and practices into the classroom	27	55	29	59

Frequencies and percentages reported exclude missing cases.

Objective 6: Identify successful recruitment and retention practices used to recruit minority or non-traditional students into agricultural education.

Teachers reported minority groups represented in their programs and specific recruitment strategies used to recruit minorities. Over half of the teachers reported having minority groups in the high school student body; however, only 16% indicated having minority students enrolled in their program. Thirty-one percent of Pennsylvania teachers reporting minority enrollments in agricultural education had black students enrolled, 18% had Hispanic students enrolled, 27% Asians, and 8% had American Indian students enrolled in the agricultural education program.

Seventy-five percent of the teachers who had reported having minority students enrolled in their programs indicated that they were not doing anything to specifically recruit minorities into their programs while nine teachers reported they were including currently enrolled minority students in recruitment efforts. Other activities teachers included to recruit minority students into the program were fun and beneficial programs, using national FFA materials, and working with the school guidance counselors.

Two-thirds of the teachers thought teacher preparation programs should include information regarding racial minorities. Teachers believed this information would help them develop an understanding of minority groups and be beneficial for recruitment and retention of minority students. Only 40% of the teachers reported they had courses or activities available at their university teacher education center which dealt with racial minorities.

Summary

Future or current enrollees and future or current non-enrollees were influenced by similar enrollment factors. Guidance counselors and agricultural education teachers perceived many of the same influential factors, identified by students, as impacting enrollment decisions. These included the future value of agricultural education, agricultural education's image, the role of significant others, and school standards and requirements.

Based on data reported in Part I of the study, the majority of the students who were enrolled or planned to enroll in agricultural education were traditional agricultural education students, i.e. white males from rural areas. These students tended to have a more positive outlook on agriculture than students not enrolling and were more likely to pursue postsecondary education and career placement in agriculture. The perceived future value of agricultural education strongly influenced the students' decisions to enroll. Agriculture's image and the influence of other people were both factors that had secondary impact on students' decisions to enroll or not enroll in high school agricultural education.

In Part II empirical evidence was provided which highlighted FFA organization and classroom activities as being effective recruitment and retention tools. Pennsylvania agricultural education teachers were not unlike those at the national level in rank ordering of recruitment categories perceived as most effective and most frequently used. Activities that involved school administrators, faculty, and school board members were also considered effective and were frequently used to recruit and retain students in agricultural education programs. However, data collected in this study suggest that teachers in Pennsylvania are not using the recruitment and retention practices they perceive to be most effective.

Minority student recruitment is not a major issue being confronted by agricultural education teachers in Pennsylvania. Teachers did not report any activity used specifically to recruit minority and non-traditional students into their programs. A large majority of the teachers suggested teacher education programs should include instructional information about minority cultures to help recruit minorities in the future.

Chapter 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this chapter is to summarize the findings and present conclusions and recommendations about factors which contribute to agricultural education program enrollment.

Purpose of the Study

The study focused on perceptions of students, teachers, and guidance counselors regarding the identification of factors related to high school students' decisions to enroll in agricultural education. A secondary purpose was to identify and describe agricultural teachers' perceptions toward various recruitment and retention practices.

Objectives

The objectives of the study were to:

1. Identify and describe the sociodemographic characteristics of eighth and eleventh grade students currently enrolled, anticipating enrollment, or not enrolled in agricultural education;
2. Identify various participation and enrollment factors which impact students' decisions to enroll in agricultural education;
3. Compare perceptions of agriculture instructors and guidance counselors concerning factors which impact students' decision to enroll in high school agricultural education;
4. Identify recruitment and retention practices frequently used by agricultural educators;
5. Determine perceptions of agricultural teachers about the success of frequently used recruitment and retention practices; and

6. Identify successful recruitment and retention practices used to recruit minority and non-traditional students into agricultural education.

Summary of Findings and Methodology

Part I of this study surveyed students, teachers and guidance counselors from 13 agricultural education programs. These surveys addressed perceptions regarding factors which impact students' decisions to enroll in agricultural education. In Part II of the study, 76 teachers were mailed instruments (50 responded) to determine recruitment and retention activities they perceived to be most effective and most often used in their programs.

The majority of students who were enrolled or planned to enroll in agricultural education had less than a B (3.00) academic average and were white males from rural areas in Pennsylvania. About one-half of the current and future enrollees expressed an interest in an agricultural career. However, 17% of eighth graders and 3% of eleventh graders not enrolled also indicated agricultural career interests.

Students responded to a series of statements concerning their perceptions of agricultural education and why they chose to enroll or not enroll. The data suggested that regardless of enrollment status or grade level, similar factors influenced students' decisions to enroll in agricultural education. The factors identified were future value of agricultural education, image of agricultural education, the role of significant others, and school standards and requirements.

Guidance counselors and teachers did not show significant agreement on the rank order of factors which they believed to impact students' enrollment decisions. Teachers perceived that students were influenced most by friends enrolled in the program, while counselors perceived students' interests in animals, plants, and machinery to be the most influential factor affecting enrollment decisions.

In Part II of the study, teachers evaluated 64 recruitment practices as to their frequency of use and perceived effectiveness in their agricultural education programs. FFA

related activities were perceived to be effective recruitment and retention activities by the teachers, and were used most frequently. However, teachers ranked classroom related activities as being most effective. Interaction of agricultural education teachers and students with school administrators, faculty, and school board members was also regarded as moderately effective and sometimes used.

Minority recruitment was also addressed in this study. Sixteen percent of the teachers participating in the study reported that they had minority students enrolled in their agricultural education programs. Seventy-five percent of the teachers who had reported having minority students in their high school student body indicated they were doing nothing to recruit minority students into the agricultural education program. Teachers suggested that university teacher education programs could provide information which would help them understand minority cultures and be beneficial in minority recruitment and retention efforts.

Conclusions and Implications

Objective 1: Identify and describe the sociodemographic characteristics of eighth and eleventh grade students currently enrolled, anticipating enrollment, or not enrolled in agricultural education.

The large majority of white males found to be enrolled or planning to enroll in agricultural education suggests that Pennsylvania's agricultural education enrollment is traditional, i.e. few female or minority students are enrolling. This coincides with findings related to objective number 6 where teachers reported they were doing nothing to recruit minority students into agricultural education programs.

The location of minority populations in relation to agricultural education programs may contribute to small minority enrollments. Minority populations tend to be found in urban areas of Pennsylvania, while most agricultural education programs are located in rural areas. To increase minority participation in agricultural education, new program

development efforts in urban schools must be considered along with increased minority recruitment efforts. Population trends in the U.S. have shown increased urbanization and significant growth in minority groups. These trends will require agricultural educators to change and adapt programs in order to meet the needs of growing minority populations.

Agricultural science and technology requires persons with high academic abilities and interests. The data suggest that students who enroll do not demonstrate high academic abilities. To recruit students who exhibit keen academic abilities teachers should develop agricultural programs to challenge students academically and offer incentives to students who plan to pursue postsecondary education. Curriculum modifications which include problem solving in the areas of agricultural science and technology may provide greater challenges to students. Incentive for students pursuing postsecondary education might also include science credit for agricultural education courses and university credit for secondary agricultural education course work. It may be necessary to offer both vocational and academic agricultural course tracks to reach more students.

Although agricultural education is reaching a large number of those interested in agricultural careers, a few students not enrolled also indicated agricultural career interests. There should be some concern that agricultural education is not meeting the needs of all students interested in agricultural professions. Reasons why students with an identified agricultural interest are not enrolling should be investigated at the local level where possible changes can be made to adapt the agricultural education program to the needs of all students.

Agricultural careers will continue to require personnel from a variety of educational and sociodemographic backgrounds. Therefore, recruitment and retention efforts which relate to a diversified student population will be required by local agricultural education programs. Agricultural educators must consider the needs and interests of the non-traditional student in order to maintain enrollment of talented students in agricultural education programs. The strength of America's agricultural industry depends heavily on a

well trained work force. Educating persons to develop agricultural skills and a working knowledge of the industry is a major role of agricultural educators.

Objective 2: Identify various participation and enrollment factors which impact students' decisions to enroll in agricultural education.

If agricultural education is to reach a greater cross-section of students, agricultural educators at all levels need to be aware of factors which influence students' enrollment decisions (Scanlon et al., 1989). Recent studies suggested that students enrolling in agricultural education perceived the future value of the program to be a significant factor in their decision to enroll. Although half of these students indicated an interest in pursuing an agricultural career, if they did not perceive the agricultural education program as contributing to their career goals, they were not as likely to enroll. Therefore, program offerings must become congruent with students' career goals and agricultural industry's entrepreneurial opportunities.

Students enrolled or planning to enroll also perceived agricultural education program image and influence from their peers and adults as impacting their decision to enroll. However, these factors also impacted students' decisions not to enroll. These factors are of concern and suggest that agricultural educators need to educate youth and adults about agriculture. Agriculture represents an immense food and fiber system with an international scope. However, few people view agriculture in this perspective and perceive it to be the equivalent of farming. This image contributes to students' perceptions that the agricultural education program does not contribute to their future well being. These perceptions are reinforced by peers and adults with limited knowledge about agricultural education and the agricultural industry. Therefore, to assure an agriculturally literate population teachers must develop active public relations and recruitment programs which depict a comprehensive portrayal of both the agricultural program and industry. Through these efforts perceptions of agricultural education should change and result in increased student enrollment.

Objective 3: *Compare perceptions of agricultural education teachers and guidance counselors concerning factors which impact students' decisions to enroll in high school agricultural education.*

Although teachers and counselors did not agree on the rank order of factors influencing students' enrollment decisions, they did identify the same nine factors as the most influential. Teachers perceived student interaction with friends enrolled in the agricultural education program to be more influential than the agricultural related factors believed most influential by counselors. This suggests that counselors may encourage students from farms and those with agricultural work experience to enroll in agricultural education more often than students without experience in production agriculture. Teachers should work closely with counselors to enhance their knowledge of agriculture and inform them of the numerous opportunities available in agriculture in addition to farm production. This cooperative effort should strengthen local level career counseling and improve agricultural education program enrollment.

Objective 4: *Identify recruitment and retention practices frequently used by agricultural educators.*

FFA related activities were perceived to be most frequently used for student recruitment and retention. National FFA program materials were also frequently used. This suggests that the FFA should not be overlooked as a motivational recruitment device. However, the fact that all students are not interested in the FFA program suggests that teachers should not rely entirely on FFA related activities but use additional recruitment practices to attract and retain students. Recruitment practices that highlight classroom activities, school administrators and faculty public relations, and junior high school student presentations should be adopted to complement frequently used FFA activities.

Objective 5: *Determine perceptions of teachers about the effectiveness of frequently used recruitment and retention practices.*

The category "Classroom activities" was ranked first by teachers as a recruitment and retention practice category perceived effective. Classroom activities identified by teachers as effective included making course schedules more flexible, offering science credit for agricultural education courses, incorporating new technological ideas and practices into curriculum, and taking field trips to modern agricultural operations. However, these practices were not as frequently used as other recruitment and retention practice categories. Infrequent use of these activities may be due to budget constraints and/or a lack of administrative support. Securing support for the agricultural program from the budget committee or school administration is a challenge that agricultural education teachers must accept. Therefore, to meet this challenge, teachers must continue to include school administrators, faculty, and school board members in agricultural program activities. In addition, positive public relations efforts are necessary to keep citizens informed and to maintain program support .

Curriculum changes that include broadened agricultural perspectives are necessary to recruit and retain students. These changes will require both financial and personnel support from state level agricultural educators. In order to offset the recent increase in high school graduation requirements and scheduling conflicts which have negatively impacted agricultural education's recruitment and retention efforts, flexible scheduling must be considered. Offering semester courses and granting science credit for agricultural education would help meet academic requirements and decrease scheduling conflicts encountered by students interested in agricultural education enrollment (Johnson, 1989).

In order to help portray a contemporary agricultural image, more teachers should adopt these classroom activities in addition to the activities more frequently used. However, this will require additional time, a valuable resource often perceived as scarce. Therefore, incorporating effective recruitment and retention practices into agricultural education programs may seem too time consuming. Yet, the long-term results should merit improved programs and increased enrollments.

Objective 6: *Identify successful recruitment and retention practices used to recruit minority or non-traditional students into agricultural education.*

The majority of teachers surveyed reported that they did little to recruit minorities. This is a concern because minority populations are increasing in America and agricultural businesses are employing more minorities in the agricultural industry. Therefore, it is imperative that greater emphasis be placed on minority recruitment at the local high school level. Teacher education programs should provide preservice instruction to teachers which would help them identify cultural differences and develop techniques to meet the needs of minority populations.

Recommendations

Based on the findings and conclusions of this study the following seven recommendations are made.

1. Agricultural education curricula should be broadened to reflect current technical and non-production segments of the agricultural industry.
2. State and local level agricultural educators need to assume leadership responsibility in establishing alternatives to the traditional structure of Pennsylvania agricultural education programs, particularly the two-hour vocational education requirement, obtaining science credit for agricultural education courses, and offering semester courses.
3. University teacher education programs need to continue incorporating teaching strategies for preservice and inservice programs which reflect current social and technical trends in the production and non-production segments of the agricultural industry.
4. University teacher education programs must incorporate minority cultural awareness into teacher preparation programs to strengthen future minority student recruitment and retention.

5. Pennsylvania agricultural education teachers should continue to use FFA activities, public relations activities and community service programs to maintain and build a positive image of the agricultural education program.
6. Pennsylvania agricultural education teachers need to include educational field trips to modern, technical and progressive agricultural production and non-production operations as part of their program.
7. Elementary and junior high school grades K-8 should receive agricultural orientation courses which emphasize instruction about agriculture, potential agricultural careers, and entrepreneurial opportunities.

Recommendations for Further Study

Based on this study it is recommended that further research be conducted to:

1. Determine perceptions of students, from schools without agricultural education programs, before and after receiving instruction about agriculture and the industry's career opportunities.
2. Identify additional factors which contribute to students' decisions not to enroll in agricultural education, and describe factors which would attract non-traditional and academic students into agricultural education. A qualitative research design is suggested for this research to follow up on this study's findings in more detail.
3. Secure funding and professional expertise from private agricultural industry for Pennsylvania agricultural education curriculum reform and development.
4. Obtain science credit for agricultural education courses in Pennsylvania high schools.
5. Investigate the feasibility of offering vocational and academic curriculum options for agricultural education students.

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